

## Appendix 2.

### Ecological Reference Worksheet

**Author(s) / participant(s):** Don Ashby Jr., D'Laynn Bruce, Jim Norris, John Hartung, Jerry Sparks

**Contact for lead author :** Don Ashby Jr. **Reference site used? Yes/No** No

**Date:** 3/15/2005 **MLRA:** 70 **Ecological Site:** Swale CP-2 This must be verified based on soils and climate (see Ecological Site Description). Current plant community cannot be used to identify the ecological site.

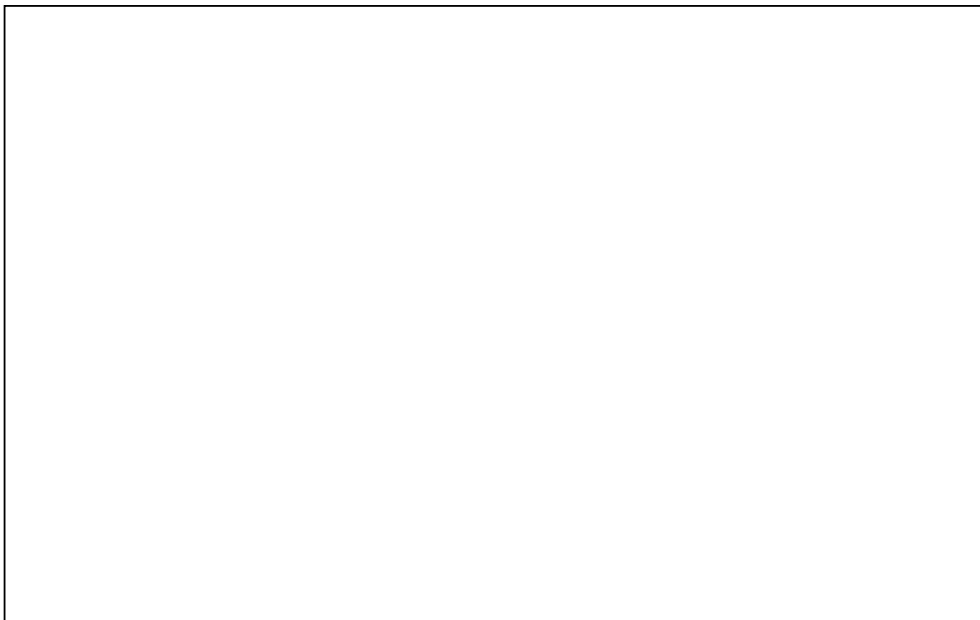
<b>Indicators:</b> For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above and below average years for <u>each</u> community within the reference state, when appropriate & (3) site data. Continue description on separate sheet.	Indicator Weight
<b>1. Number and extent of rills :</b>  None	
<b>2. Presence of water flow patterns:</b> This site occurs in ungullied nearly level to gently sloping swales and drainages that receive surface runoff from adjoining sites. Some water flow patterns may be present when flooding occurs, one or more times in most years.	
<b>3. Number and height of erosional pedestals or terracettes:</b>  None	
<b>4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground) :</b>  Bare ground may be present up to 30%. Bare patches should be less than 6 inches in diameter.	
<b>5. Number of gullies and erosion associated with gullies:</b> This site occurs in elongated drainages that transport surface runoff from adjoining upland sites to bottomlands. Some gullies and erosion from gullies may be present when flooding occurs, one or more times in most years.	
<b>6. Extent of wind scoured, blowouts and/or depositional areas:</b>  None	
<b>7. Amount of litter movement (describe size and distance expected to travel) :</b> Fine to medium (plant material) litter movement 1-3 feet can occur during high intensity rainfall events. Litter can accumulate along the edges of the swale when flooding has occurred.	
<b>8. Soil surface (top few mm) resistance to erosion (stability) values are averages - most sites will show a range of values for both plant canopy and interspaces, if different):</b>  Anticipated to be 5-6 at the surface and subsurface in the interspaces and 6 at the surface and subsurface under vegetation.	
<b>9. Soil surface structures and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different) :</b> Soils are fine sandy loam, silty clay loam, clay loam, or clay, brownish in color with the A horizon 6-12 inches in depth. These soils are moderately deep to deep and moderately well drained with moderately slow to slow permeability.	
<b>10. Effect of plant community composition (relative proportion of different functional groups) &amp; spatial distribution on infiltration &amp; runoff:</b> Grasses and Forbs account for 95% of the annual herbaceous production for this site and makes up 40% of the sites composition. Surface runoff is medium, infiltration is slow and water holding capacity is high.	
<b>11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):</b>  None unless continuous yearlong grazing has occurred to the point that Tobosa and Broomsnake weed dominate the site.	
<b>12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: indicate much greater than ( &gt;&gt; ) , greater than ( &gt; ) , and equal to ( = ) :</b> Warm Season stolon grasses>Warm Season bunch grasses>Cool Season rhizome grasses>Forbs(Silverleaf nightshade, Ragweed)>Shrubs(Winterfat, Yucca)	
<b>13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence) :</b> Most of the perennial grasses, forbs, shrubs are long lived. Extended drought periods tend to cause high mortality rates in the grass species, with some mortality in the forbs. Shrub and trees mortality can occur in severe, multiple year droughts.	
<b>14. Average percent litter cover ( 25 % ) and depth ( 1.2 inches).</b>  Percent litter and depth will increase with multiple, above average rainfall years.	
<b>15. Expected annual production (this is TOTAL above-ground production, not just forage production):</b> 1200 lbs/ac low precip. years, 200 lbs/ac in average precip years, 2800 lbs/ac in above average years. Grass/Grasslikes make up to 85% of the total annual production.	
<b>16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "can, and often do , continue to increase regardless of the management of the site and may eventually dominate the site":</b> Mesquite species has the greatest potential for invading this site when continuous grazing or grazing continually during the period from April to October occurs.	
<b>17. Perennial plant reproductive capability :</b> Because of the extra water received by this site the grass is denser, stands higher and highly productive. Weather related and natural disease can result in reduced reproductive capabilities.	

**Photograph (s)**

**MLRA** : 70

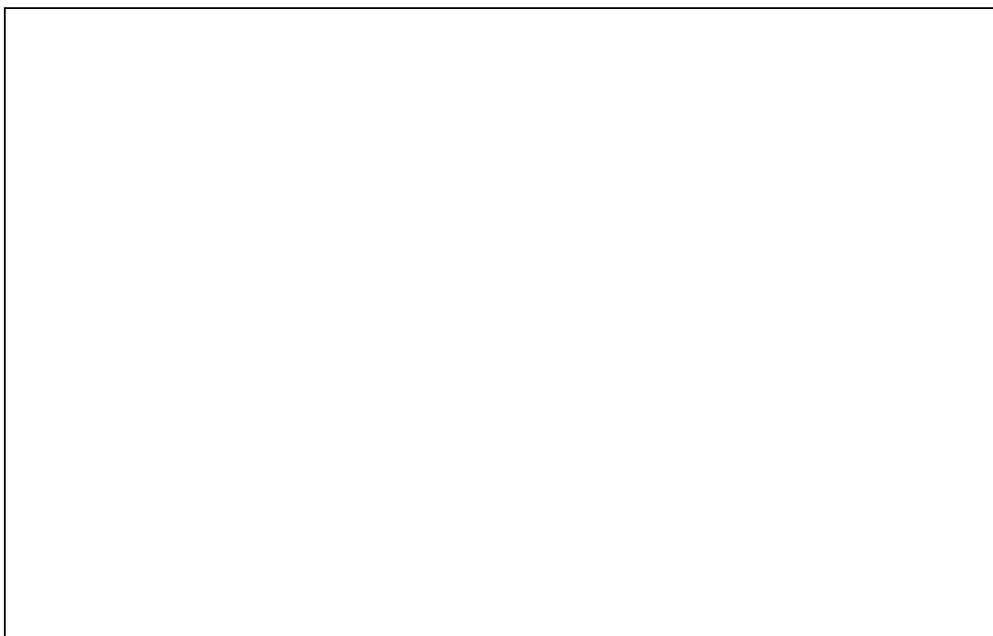
**Date :**

**Ecological Site :** Swale CP-2



**Photo # 1**

**Comments :**



**Photo # 2**

**Comments :**

## Appendix 4.

## Functional / Structural Groups Worksheet

State	NM	Office	Fort Sumner	Ecological Site	Swale CP-2
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<b>Observers</b>	<u>Don Ashby Jr., D'Llaynn Bruce, Jim Norris, John Hartung, Jerry Sp</u>	<b>Date</b>	<u>3/15/05</u>
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**Indicate whether each "structural/functional group" is a Dominant (D)**(roughly 40-100% composition), a**Sub-dominant (S)** ( roughly 10-40%) composition) a**Minor Component (M)** (roughly 2-5% composition), or a**Trace Component (T)** ( <2% composition) based on weight or cover composition in the area of interest (e.g., "Actual <sup>2</sup> column) relative to the "Potential <sup>2</sup> column derived from information found in the ecological site/description and/or at the ecological reference area.

**Biological Crust** 3 dominance is evaluated solely **oncover** not composition by weight